

barriers do not create market power. Indeed, Owen contends that there is no "empirical evidence" of such power.<sup>2</sup> Herein is probably the central disagreement between the carriers and the CPUC. If there is market power, then the exercise of that power produces rates that are higher and likely more discriminatory than would result in a competitive market. Such rates are, ipso facto, unreasonable. On the other hand, if there is no market power, then the market determines the prices, the carriers are unable to impose unreasonable rates, and there is no need for regulation.

Owen is flatly wrong that there is no evidence of market power. There is ample evidence that market power exists. It may be, as the CPUC acknowledges, that no one factor, standing alone, is dispositive, but the analysis of all factors collectively makes a compelling case that there is not adequate competition in the cellular markets in California to ensure fair and reasonable rates in the absence of regulation. The CPUC lists the following factors as the basis for its conclusion in this regard:

- o "The government-created duopoly structure for cellular service has created near absolute barriers to entry."
- o There are "interlocking ownership interests between cellular carriers within and among the cellular markets in California."
- o The duopolists in each market have been able "to price their services at non-competitive levels and to earn returns far above competitive levels."
- o "In the near term, competitive pressure from alternative providers of substitute service will not be sufficient to check the prices and earnings of the duopoly carriers."
- o "The market share between the duopolist cellular carriers in

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<sup>2</sup>Owen at 18.

the same markets in California have remained substantially the same over a five year period."

- o The market share of the duopolists "relative to resellers, has steadily increased at the latter's expense."
- o "Cellular rates in California are among the highest in the nation."
- o "Cellular rates in California... have failed to decline commensurate with substantial declines in capital and operating costs of providing cellular service."
- o "The market value of cellular spectrum reflects investor expectations of earnings well above levels normally found in competitive markets."
- o "The market value of cellular spectrum...are (sic) not commensurate with the capital investment made to expand capacity of cellular systems or otherwise explained by spectrum scarcity value."<sup>3</sup>

In my opinion, the CPUC's strongest evidence of market power lies in its findings -- which are basically undisputed -- that the carriers' operations generate value and profits that far exceed levels that which would be realized from a competitive marketplace. The CPUC evidence falls into two categories: Q ratios and accounting rates of return.

#### **Q Ratios**

A Q ratio is a fraction, the numerator of which is the market value of the firm, and the denominator is the replacement value of the firm's assets. In a totally competitive environment with unrestricted entry, Q ratios should be 1.00 because investors would be indifferent as to whether they buy an existing firm or alternatively buy new production plant and start a new one. If the Q ratio exceeds 1.00, then there investors attach some value to the

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<sup>3</sup>Id., CPUC Petition at i-ii.

firm (or industry) beyond that which can be justified simply by reproducing the firm's assets. The extent to which the Q ratios exceeds 1.00 measures the extent of this intangible value relative to the tangible value of the assets.

There can be no serious argument that cellular Q ratios are high. In 1991, the National Telecommunications and Information Administration ("NTIA") calculated the Q ratios for cellular firms in small markets at 6.68 and in large markets at 13.52. These compare with maximum Q ratios in a Brookings Institution survey of 20 industries of 3.24.<sup>4</sup>

Owen challenges the relevance and stability of the NTIA ratios, arguing that they reflect data for only a small part of the industry for only one year.<sup>5</sup> While one can certainly question the two-digit specificity of the NTIA ratios, there is no evidence that the values of cellular properties have fallen, and certainly not to the point where they would yield Q ratios in the range of 1.28 to 3.24.<sup>6</sup>

The carriers' principal disagreement with the CPUC concerning Q ratios revolves around the interpretation of the high values. The carriers' main point is that the denominator of the Q ratio fails to capture intangible sources of value, such as startup

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<sup>4</sup>CPUC Petition at 62.

<sup>5</sup>Owen at 31.

<sup>6</sup>According to Hazlett, 1.28 was the 20 industry average for the period 1961-85; 3.24 was the highest. Thomas W. Hazlett, "Market Power in the Cellular Telephone Duopoly", August 1993, page 14 (referenced at 50 and 62 of the CPUC Petition).

costs, customer acquisition costs, expected future growth, and spectrum scarcity value.<sup>7</sup>

Startup costs and customer acquisition costs are essentially the same thing: the principal startup cost to a cellular carrier (aside from new facilities, which are in the Q ratio denominator) is customer acquisition cost. Since these costs are not physical assets, they are not in the denominator, but they definitely represent a cost that a new entrant would have to incur. Therefore they justify a Q ratio greater than 1.00.

But they do not justify Q ratios in the range of 6.7 to 13.5. Without source or attribution, Hausman variously estimates customer acquisition costs as ranging from \$100 to \$500<sup>8</sup>. If we accept the midpoint of this range, \$300, as the understatement of the Q ratio denominator, we can add it to the average asset cost per subscriber, as reported by the Cellular Telephone Industry Association ("CTIA"), to compute revised Q ratios. For June 1993, CTIA reports average cumulative capital investment per subscriber as \$978.<sup>9</sup> Substituting this figure as the denominator, we can compute the numerators of the Q ratios as follows:

Denominator	NTIA Q Ratio	Numerator
\$978	Low: 6.7	\$6553
\$978	High: 13.5	\$13,203

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<sup>7</sup>Owen at 32, GTE at 27, Charles River at 26, Hausman at 14.

<sup>8</sup>\$350-\$500 at page 14, \$100-425 at page 16.

<sup>9</sup>CTIA, Cellular Telecommunications Industry Association Mid-Year Data Survey, September 6, 1994.

If we add Professor Hausman's alleged \$300 understatement of the denominator, we can derive restated Q ratios:

Denominator	Numerator	Q Ratios
\$1278	Low: \$6553	5.13
\$1278	High: \$13,203	10.33

These ratios are still multiples of the maximum Q ratios found in the Brookings Institution survey of 20 industries.

The carriers are correct that Q ratios should be higher than 1.00 for firms that can be expected to grow, because investors focus on the future size and scope of the enterprise, not on its present condition. Q ratios should be substantially higher than 1.00 for firms that are in the startup phase. Indeed, they would be infinite for a startup firm prior to the acquisition of plant. That may explain the high Q ratios that Professor Hausman purports to have calculated for Nextel and other ESMR providers,<sup>10</sup> but it does not explain the Q's of the established and operating carriers. Their investment is already in place, and while it is growing, the percentage rate of growth does not justify Q ratios in the range of 6.7 to 13.5.

The NTIA Q ratios were calculated in 1991. During the period 1991 through mid-year 1994, average investment per cellular system increased from \$7.22 million to \$10.39 million, an annual rate of increase of 13 percent.<sup>11</sup> At this rate of growth, investors would have to inflate the denominator of the Q ratio by the cumulative

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<sup>10</sup>Hausman at 14,15.

<sup>11</sup>Computed from CTIA Mid-Year Report, September 6, 1994

effect of more than 15 years' growth in order to justify a Q ratio at the lower end of the ratios found by NTIA.<sup>13</sup>

The foregoing observations suggest that while cellular carriers' Q ratios should be higher than 1.00, they could not possibly be in the range of 6.7 to 13.5 in the absence of some source of value beyond competitive market returns on startup costs and future investments. Clearly, investors in cellular properties anticipate supracompetitive earnings on cellular plant and equipment.

#### **Accounting Rates of Return**

The CPUC finds that the accounting rates of return of the cellular carriers in the largest markets representing the majority of California consumers have been consistently high.<sup>14</sup> LACTC claims that its returns overstated by about 20 percent,<sup>15</sup> but that is because LACTC focuses on wholesale rates of return rather than total return. The CPUC requires the carriers to report separately wholesale and retail expenses, but there are currently no mandatory allocation standards for making this separation.<sup>16</sup> Thus, the wholesale-only returns reported by the carriers are of little

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<sup>13</sup> $1.13^{15} = 6.25$ ,  $1.13^{16} = 7.07$

<sup>14</sup>CPUC Petition at 48.

<sup>15</sup>LACTC at 24.

<sup>16</sup>The standards adopted in Decision 92-10-026 were stayed in Decision 93-05-069.

probative value.<sup>17</sup> McCaw, the holding company, claims it lost money up until the most recent quarter,<sup>18</sup> a fact which is irrelevant to the California situation, where McCaw's major affiliates, LACTC and Bay Area Cellular Telephone, have both been highly profitable.<sup>19</sup>

The carriers point out that returns in the smaller California markets are not high,<sup>20</sup> a fact readily acknowledged by the CPUC in its recent Decision 94-08-022:

We acknowledge that the total earnings of any given carrier can vary significantly from one MSA to another. In a few cases, even net deficits have been reported in some years. Yet, the returns earned by carriers in the largest metropolitan areas representing the majority of California consumers have been consistently high over several years. Differences in earnings among carriers and MSAs can be attributed to a variety of factors including population density and mobility, commuter traffic, geographic factors, management quality, and changing technology. Another factor, particularly in earlier years, is the age of the carrier and how much time it has had to establish itself in the market. Not surprisingly, the highest returns tend to be earned in those MSAs with the greatest population density. But undeniably, another essential element explaining the high returns in certain regions is that the large wholesale cellular market in these regions is shared by only two

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<sup>17</sup>To illustrate, in 1992, LACTC allocated 28 percent of its customer accounts and sales expense to wholesale even though it deals with maybe two dozen resellers, compared with possibly nearly 500,000 retail customers. See L.A.Cellular 1992 Annual Report to the CPUC for 1992 and Opening Comments in CPUC I.93-12-007, February 25, 1994 at 8.

<sup>18</sup>McCaw at 44.

<sup>19</sup>LACTC and Bay Area Cellular have earned average annual after-tax returns of 56.2 percent and 43.2 percent, respectively for the last five years. CPUC Petition at 48,49. See Attachment 1 hereto for the accounting rates of return of all California carriers in 1992.

<sup>20</sup>e.g. Owen at 29.

duopolists.<sup>21</sup>

As with Q ratios, the carriers attack the relevance of the results. They argue that accounting rates of return (1) fail to recognize the need to recover high startup costs;<sup>22</sup> (2) reflect embedded costs, not replacement costs;<sup>23</sup> and (3) fail to reflect the value of intangibles.<sup>24</sup> They contend that "economic returns" rather than accounting returns are the relevant basis for evaluating profitability of the cellular industry.<sup>25</sup>

The first two of these challenges are specious. The carriers in the major markets, which are the focus of the CPUC's petition, have been making excessive rates of return for at least five years, and a number of them for the last seven.<sup>26</sup> Indeed, there has been no evidence of significant startup losses whatever in these markets.

Nor is there any evidence that replacement costs would differ significantly from the book value of present plant. All carriers are using state-of-the-art equipment and facilities, most of their investment is less than three years old, and there has been relatively low inflation during the period when it was installed.

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<sup>21</sup>D.94-08-022

<sup>22</sup>Owen at 30, McCaw at 38,45, Charles River at 25.

<sup>23</sup>Owen at 30, McCaw at 44.

<sup>24</sup>Owen at 30, Charles River at 23, Hausman at 15,16.

<sup>25</sup>Charles River at 22.

<sup>26</sup>For example, Los Angeles SMSA earned 79.26 percent in 1987; Bay Area Cellular earned 42.40 percent in 1989; GTE Mobilenet earned 31.65 percent in 1989.



As one would expect, the investment cost per new subscriber has been declining, nationally from \$916 during the year ended June 1990 to only \$536 during the year ended June 1994.<sup>27</sup> Moreover, with the recession in California, it may be that the replacement cost of some of the carriers' real property is lower than the book value. If anything, use of embedded investment may understate the replacement cost of plant.

The exclusion of return on intangible value, is the only arguable basis for the high returns. The carriers suggest two sources of value, customer acquisition cost and spectrum scarcity value. As noted, customer acquisition value is the same as start-up cost. In accounting cost analysis, this cost is not hidden (as it is in the Q ratios) because customer acquisition costs are expensed on the books of the company.<sup>28</sup> Thus, customer acquisition costs, they have already been reflected in the accounting rates of return. As noted, these returns have been high for five to seven years.

This leaves spectrum scarcity value as the primary, if not the sole source of value not reflected in the investment base on which returns are calculated. Spectrum scarcity value is also the basis for the carriers' high Q ratios, and it would be the basis for the "economic returns" advocated by some of the carriers.

Charles River defines the "economic rate of return" as the

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<sup>27</sup>Computed from CTIA's 1994 Mid-Year Report, September 6, 1994.

<sup>28</sup>Specifically, customer accounts and sales expense is reported on Line 4 of Schedule 9 of the carriers' Annual Report to the CPUC.

"discount rate that equates the present value of the investment's expected net revenue stream to the initial outlay."<sup>29</sup> This approach is utterly useless as an indicator of the presence or absence of market power because it includes within it the exercise of that power. If the expected net revenue stream is generated by supracompetitive prices, then the "economic rate of return" will inflate the present value of initial outlay. That is exactly what accounts for the very high prices paid for cellular licenses.

#### **Spectrum Scarcity Value**

No one questions whether spectrum has value: it does. The question is whether that value bestows pricing power that justifies the intervention of the CPUC in the pricing of cellular services. In large measure, this question revolves around whether the CPUC has a legitimate basis for forcing the carriers to pass through to cellular ratepayers the returns on that spectrum value.

One of the carriers' arguments can be dismissed as utterly specious: that the spectrum value represents the "opportunity cost" of spectrum which should be conveyed to the market so as to allocate spectrum use in an economically efficient fashion.<sup>30</sup> This argument assumes that spectrum is fungible: that there is a market for spectrum that would allow high prices for cellular use to bid away spectrum from other uses. This assumption is factually incorrect. There is no opportunity for cellular to bid for spectrum against other uses because the FCC has closed the market.

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<sup>29</sup>Charles River at 22.

<sup>30</sup>Owen at 24, McCaw at 45.

Cellular spectrum may be used only for cellular mobile telephone service.

As used for cellular telephone service, spectrum has an extraordinarily high value. As noted in the CPUC petition, cellular spectrum is seven times as valuable as all the spectrum used for TV and radio broadcast.<sup>31</sup> The question is whether this high value arises from (1) the scarcity of spectrum or (2) the scarcity of spectrum licenses.

Charles River asserts that the high value arises from the scarcity: "a good is in limited supply and consumers are willing to purchase all of the units of the good that can be produced at a price that exceeds the average cost of producing the good."<sup>32</sup> The "good", claims Charles River, is spectrum. According to Charles River, the value of spectrum is determined by the amount of spectrum allocated to a use in relation to the demand for that use. It would be the same regardless of the number of cellular service providers.<sup>33</sup>

If the simple shortage of spectrum were the cause of its value, then we should expect to see a strain on the supply of spectrum: blocked calls, interference, inability to add customers. In short, we should see some evidence that spectrum is in short supply. There is none. To the contrary, the controversy seems to revolve around whether there is excess capacity. At pages 51

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<sup>31</sup>CPUC Petition at 54.

<sup>32</sup>Charles River at 23.

<sup>33</sup>Id. at 24.

et seq. of its Petition, the CPUC discusses the utilization of the carriers' capacity and concludes that there is no evidence that they are operating at maximum feasible levels of output. The carriers, in response, argue vociferously that their systems are optimally sized to the demands of the market and that some level of underutilization is necessary for efficient operations.<sup>34</sup> None contends, or even suggests, that they are constrained in serving their markets by the shortage of spectrum. There is thus no evidence whatever that high prices are necessary to limit demand to the availability of spectrum.

If shortage of spectrum is not the cause of high value, then it must be shortage of spectrum licenses. The CPUC has concluded correctly that the high value of cellular spectrum is caused by the ability of only two duopolists to control the market for the use of this spectrum with no possibility of challenge from new entrants.<sup>35</sup> In this context, "scarcity" is the same as "monopoly" and is identical to the "scarcity" of electric, gas, water, cable TV and telephone franchises. It is the basis for the pricing power of these utilities and the justification for their regulation.

That the carriers have the market concentration to impose monopolistic pricing cannot be challenged. The carriers debate the relevance of the Department of Justice Herfindahl-Hirshman ("HHI") indices for the years 1998 and 2004 (discussed below), but none can challenge that at the present time those indices are approximately

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<sup>34</sup>LACTC at 34, McCaw at 43, Owen at 34, Charles River at 28-30.

<sup>35</sup>CPUC Petition at 57.

5000 (twice the square of 50%) in every California market. Competition from the ESMR and PCS is still in the future. For at least the next two to three years, the cellular carriers will continue to be able to impose prices that yield supracompetitive profits on the monopoly value of their spectrum licenses.

The carriers have not and cannot summon any good argument for retaining the supracompetitive returns that they earn on the scarcity (read "monopoly") value of their spectrum licenses. Cellular telephone service is a public utility, vested with the public interest, with major importance in mobile California. As the CPUC stated last year:

Mobile service has become an integral part of the telecommunications services relied upon by many businesses and institutions in the State. Entrepreneurs who are sole proprietors and in the past had to rely on answering machines or answering services are now, with mobile communication capability, instantly accessible. Further, many public safety and community institutions rely on mobile telephony to improve their emergency response capability.<sup>36</sup>

No utility of which I am aware is allowed to earn a return on the intangible value of its franchise. That is because the franchise is a public good, and returns on its value accrue to the public in the form of rates that are held below their monopoly level by the force of regulation. From the economic standpoint, it is inefficient to allow the utilities unrestricted pricing power because a monopolist maximizes its profit by charging the highest price the that the traffic will bear even though such prices have the effect of repressing demand. Monopoly pricing does not

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<sup>36</sup>Investigation 93-12-007, December 17, 1993 at 8.

allocate society's resources in an efficient manner.

In the case of the cellular franchises, the answer might be different if the carriers paid the public for their franchises. For example, the Personal Communications Services ("PCS") carriers arguably should be allowed to earn a return on the purchase value of their licenses because they will have paid the public a competitive auction price for them. The cellular carriers did not. Although McCaw and other Block A carriers paid for their licenses, that was a secondary market in which the recipients of free licenses received a windfall equivalent to the present value of the expected future stream of monopoly profits. It is circular to argue that those prices now justify the retention of monopoly earnings by the purchasing carriers.

#### **Regulation in California**

As a practical matter, the issue of whether the CPUC should or should not force the carriers' to pass supracompetitive profits on to ratepayers is largely irrelevant because it has never done so and does not currently intend to do so. For all the carriers' complaints, the CPUC's regulation has been very lighthanded. It has never required any cellular carrier to reduce rates, nor has it ever prescribed an overall rate of return, a revenue requirement, or a rate structure.

Regulation has had two measurable benefits in California, and it promises a third. The first benefit is that, while regulation has not forced prices down, it has not allowed them to increase either. The NCRA survey attached to the recent CPUC decision

demonstrates that rates for personal safety and convenience use in the three largest California markets either decreased or held steady since 1988, but that they increased in 22 of the other 27 markets surveyed.<sup>37</sup>

The second benefit of regulation in California has been to retain competition at least in the portion of the market where it can flourish: the retail sector. The rulings which Hausman asserts to be anti-competitive, relating to retail margins and the prohibition of bundling, have in fact been pro-competitive because they have been designed to treat all retailers, whether carriers affiliates or resellers, on a non-discriminatory basis, thus maintaining a "level playing field" for competition in the retail sector. The wholesale margin, for example, is not designed so much to protect resellers as to insure that resellers (hence resellers' customers) are not charged rates to cover costs which the carriers do not incur, e.g. customer acquisition, customer service, credit checking, billing. If the CPUC regulation had been as destructive to retail competition as Hausman asserts,<sup>38</sup> then California would not have the largest market share of cellular users in the nation.<sup>39</sup>

The fact is that resellers do offer price competition to the carriers for retail service. In its cellular inquiry, I.88-11-040, the CPUC recently heard unrebutted evidence that at least four

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<sup>37</sup>CPUC Decision 94-08-022, Appendix 1.

<sup>38</sup>Hausman at 8.

<sup>39</sup>CPUC Petition at 26.

resellers operating in major California markets were able to offer lower retail prices to the public than the cellular carriers.<sup>40</sup>

Owen is either naive or uninformed when he argues that the cellular carriers have no incentive to squeeze resellers, even if they possess pricing power.<sup>41</sup> Resellers represent a potent enhancement of competition in California because, as noted, they offer some price competition, and because they have the power to steer end-use customers to the carrier offering the best service at the lowest cost. If resellers can be squeezed out of the market, end users must buy into either one or the other of the carriers without benefit of any opportunity to compare their performance.

The third benefit of CPUC regulation is in the future. In Decision 94-08-022, the CPUC directed the carriers to unbundle the airtime and mobile switching functions from the access functions so that switched-based resellers will have the opportunity to provide enhanced services, customer validation, call monitoring and recordation, billing, and landline interconnections in competition with the cellular carriers. The CPUC does not require that these unbundled rates be cost-based; they simply involve charging the existing tariffed wholesale usage rates along with interconnection charges similar to those charged by local exchange carriers to interexchange carriers. These switched-based resellers will be in

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<sup>40</sup>I.88-11-040, Testimony of Gary McLaughlin, Reporting Transcript at 2493-94 and 2529, Attachment 2 hereto.

<sup>41</sup>Owen at 38.



a much stronger position to compete with the duopoly carriers, thereby exerting a hitherto inadequate downward pressure on those carriers' prices for both retail and wholesale service.

#### **Future Competition**

The benefits of switched-based reseller competition will be available almost immediately following the unbundling of wholesale rates. The benefits of other forms of competition are still in the future. Contrary to the assertions of cellular carriers,<sup>42</sup> Nextel is in a very limited way in a small part of the market in Los Angeles with approximately 1000 ESMR customers.<sup>43</sup> The company is reported to be having difficulty with transmission bugs and the quality of its service, and better equipment is reportedly not due until the second half of 1995.<sup>44</sup>

The broadband PCS auctions are now scheduled for December of 1994, with licensing sometime in 1995. As the CPUC notes, it is highly unlikely that these systems can be built out sufficiently to offer head-to-head competition with the cellular carriers in the next three to five years.<sup>45</sup> Indeed, CTIA's own experts, Charles River, have opined that "it is premature to conclude that PCS will necessarily be a competitive alternative or close substitute for

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<sup>42</sup>Hausman at 19, Owen at 10, Charles River at 7.

<sup>43</sup>See August 24, 1994 Statement of Nextel Counsel in CPUC A.94-02-018, Attachment 3 hereto.

<sup>44</sup>See August 31, 1994 Wall Street Journal and September 2, 1994 New York Times articles, Attachment 4 hereto.

<sup>45</sup>CPUC Petition at 67.

cellular service."<sup>46</sup> Moreover, the President of Airtouch, which serves virtually every California cellular market, recently "estimated that it will take PCS carriers seven or eight years to deploy networks as ubiquitous as cellular, and by that time cellular carriers will have improved their networks even further."<sup>47</sup>

Assuming, however, that PCS does eventually become a competitive substitute for cellular, there appears to be considerable controversy as to the extent of that competition. The CPUC has presented HHI concentration indices that project the mobile telephone market in 1998 and 2004 still to be in the "highly concentrated" range according to the Department of Justice's merger guidelines.<sup>48</sup>

Owen argues that the Department of Justice ("DOJ") has issued these guidelines to apply to evaluations of potential mergers, not to determinations of whether to regulate, and that it would likely apply a higher standard, possibly HHIs of 2500, in the case of the cellular industry.<sup>49</sup>

There is no need to speculate as to the views of DOJ on the

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<sup>46</sup>"An Economic Analysis of Entry by Cellular Operators into Personal Communications Services", prepared for CTIA by Charles River Associates, November 1992, attached to CTIA's Comments on the California Petition, at 15.

<sup>47</sup>Statement by Lee Cox, Airtouch President, as quoted in Reply Comments of Pacific Bell and Nevada Bell, July 11, 1994, in FCC GN Docket No. 93-252 at 7.

<sup>48</sup>CPUC Petition, Appendix D.

<sup>49</sup>Owen at 7.

concentration of the cellular telephone industry. After completing, in its own words, an "extensive investigation into the cellular industry," DOJ reached the following conclusions: cellular exchange service markets are not competitive, cellular duopolists have substantial market power, and cellular carriers exercise bottleneck control over their licensed facilities.<sup>50</sup>

Nevertheless, the carriers take issue with the Commission's calculation of HHI indices. Their primary objection is that the Personal Communications Industry Association ("PCIA") forecasts upon which they are based reflect shares of subscribers rather than shares of capacity.<sup>51</sup> Several of the carrier commenters calculate alternative HHIs based on the distribution of spectrum as determined by the FCC. All of these HHIs are in the "moderately concentrated" range.<sup>52</sup>

The argument for capacity rather than subscribership as a measure of market share is that it better predicts the likelihood of future shares of sales, customers, or usage. If a dominant provider is running up against capacity limits, while new entrants have excess capacity, then market share can soon be expected to shift toward the new entrants. Current subscribership could thus be a poor predictor of future subscribership.

But the CPUC does not base its analysis on current

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<sup>50</sup>United States v Western Elec., Memorandum of the United States in Response to Bell Companies' Motions for Generic Wireless Waivers, Civ. Action No. 82-0192 (filed July 25, 1994) at 10-19.

<sup>51</sup>Owen at 16, McCaw at 37, Hausman at 24, Charles River at 5.

<sup>52</sup>Charles River at 8, Hausman at 24.

subscribership. Its HHIs reflect forecast subscribership in the years 1998 and 2003. The reason that these future subscriber-based HHIs are so high is that present capacity-based HHIs are extraordinarily high: on the order of 5000. The capacity-based HHIs that the Charles River and Hausman calculate for 1998 might arguably have relevance to the concentration to be expected in the early 21st century, but they have little relevance to the pricing power of the cellular carriers in time frame 1994 through, say, 1997.

Even if there were relevance to capacity-based HHIs for 1998 and 2004, there would be no relevance to HHIs calculated on the basis of spectrum shares. As the discussion of capacity utilization makes quite clear, the constraint on capacity is not spectrum, but the physical facilities that use the spectrum, specifically the number cell sectors relative to the amount of traffic. This will be particularly true when digital technology allows the extensive reuse of limited amounts of spectrum. It will not benefit the new PCS licensees to have 30 MHz of spectrum each if they do not have the cell sites, landline backhaul facilities and switches to use that spectrum. If capacity is to be the measure of market share, then it is these facilities that should be measured, not spectrum. Given the enormous lead in facility construction that the cellular carriers now enjoy, it is probable that the 1998 and 2004 HHIs computed on this basis would be higher than those shown by the CPUC in Appendix D to its Petition.

#### **Pricing**

Professor Hausman purports to show that cellular prices in regulated states are higher than in unregulated states. He even concludes that regulation causes this relationship.<sup>53</sup> I have not been provided the data and workpapers underlying Hausman's regressions.<sup>54</sup> I can only say that the California results have to be ambiguous because California contains markets where prices are among the highest (Los Angeles) and lowest (Sacramento) in the nation.<sup>55</sup>

I have, however, examined a somewhat more robust study of the relationship between regulation and pricing in the cellular industry that was performed earlier this year by William B. Shew for The American Enterprise Institute for Public Policy Research.<sup>56</sup> This study examined cellular service prices in 95 randomly selected markets over the period 1985 to 1991. It studied seven different dimensions of regulation.<sup>57</sup> The study concluded that there is no statistically significant relationship between price and most forms of regulation. However, the requirement for a 30-day notification

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<sup>53</sup>Hausman at 4-7.

<sup>54</sup> Airtouch and CTIA have declined to provide the underlying data to CRA. See correspondence in Attachment 5 hereto.

<sup>55</sup>CPUC Petition at 45,46.

<sup>56</sup>"Regulation, Competition, and Prices in Cellular Telephony, by William B. Shew, Prepared for The American Enterprise Institute for Public Policy Research, Working Paper Presented June 2, 1994.

<sup>57</sup>(1) the lead time required to file tariffs, (2) the requirement to obtain tariff approval, (3) the imposition of price caps, (4) examination of rate of return, (5) a statutory ban on regulation, (6) a commission decision not to regulate and (7) whether the carrier serves the state capital.

of price changes appears to increase cellular service prices by 5.9 to 7.5 percent.<sup>58</sup> At the other extreme, a statutory ban on any regulation whatever appears to increase cellular prices to small and medium sized customers by 4.7 and 6.3 percent, respectively.<sup>59</sup>

As regards California, the negative effect of advanced price notification should not apply. The CPUC allows carriers to reduce rates upon filing without notice either under the rate band guidelines or as a temporary tariff, which can become permanent after 20 days if there has been no protest.<sup>60</sup> Moreover, carriers may return to the previous levels at no notice.<sup>61</sup> The reason that there is no correlation in California between regulation and absolute price levels is straightforward: regulation has prevented prices from going up, but it has not taken deliberate steps to force them down, either. From my participation in Connecticut proceedings, I know the same to be true in that state.

The cellular carriers emphasize that while their basic service rates may not have declined significantly in nominal terms, they have declined in "real" (inflation adjusted) terms.<sup>62</sup> I have already noted that one of the benefits of regulation in California is that it has prevented price increases, that is, price increases in nominal terms. It is thus regulation, not the carriers, that

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<sup>58</sup>Id. at 74.

<sup>59</sup>Id. at 75.

<sup>60</sup>CPUC Petition at 14.

<sup>61</sup>Id. at 39.

<sup>62</sup>Owen at 26, GTE at 29, Charles River at 12.

should be credited for the "real" price reductions of which the carriers boast.

It may well be true that the similarity in prices between the California duopolists, standing alone, is not necessarily inconsistent with a concentrated, but still competitive market.<sup>63</sup> The soft drink industry, for example, is close to a duopoly, has very similar product prices, but is still highly competitive. The difference lies in the ease of entry. Soft drink manufacturers know that a price level significantly above their marginal costs will bring in swarms of competitors. Cellular carriers know that a price level above their marginal costs will bring in no competitors. In this context, the price pattern of the cellular industry is a symptom of the monopolistic nature of that market.

The carriers next claim that discounts have translated into rate reductions for the majority of their customers.<sup>64</sup> The CPUC dismisses these discounts as largely irrelevant. This dismissal is based on the record of of the Commission's wireless investigation as reported in Decision 94-08-022. Having reviewed verified evidence of the Airtouch and LACTC tariffs, the Commission found that the carriers had exaggerated the extent to which their prices had been lowered. For example, Airtouch had claimed that prices were cut by a variety of carriers in 15 advice letters. Yet, only two remained in effect at the time of Airtouch's filing, and one

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<sup>63</sup>Owen at 27, McCaw at 38, Hausman at 13, LACTC at 19.

<sup>64</sup>Owen at 28, McCaw at 39, GTE at 30, LACTC at 13, Charles River at 13.

would expire shortly. Of the 31 tariff filings cited by LACTC, only five actually reduced rates. Of 21 LACTC advice letters filed under temporary tariff authority, only five involved rate reductions. Furthermore, many of the alleged reductions involved term commitments, with penalties for early termination.<sup>65</sup>

But even if the carriers' claimed discounts could be accepted as genuine price reductions, they would hardly demonstrate the presence of a competitive market.

First, the alleged price reductions are not that great: 10 percent in the last four years.<sup>66</sup> During this period, the nationwide average cellular investment per subscriber fell by 30 percent from \$1193 to \$835.<sup>67</sup> The incremental investment per added subscriber fell by 41 percent from \$916 to \$536.<sup>68</sup> If the market were truly competitive, we should have seen greater price reductions than even the carriers claim to have achieved.

Second, the practice of offering selective discounts is altogether consistent with monopolistic pricing. A firm with monopolist pricing power will always attempt to segment its market according to relative price elasticities of demand. It will offer price reductions to selected customers or customers groups that display the greatest sensitivity to price, while retaining the

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<sup>65</sup>CPUC Decision 94-08-022 at 46-47.

<sup>66</sup>McCaw at 39-40.

<sup>67</sup>Computed from CTIA Mid-Year Report, September 6, 1994. Data for June 1994 and June 1990.

<sup>68</sup>Id. Data for June to June 1993-94 and 1989-90.



highest prices for the customers that must have the service regardless of price. Because the number of totally inelastic customers, i.e. customers who are indifferent to price, is relatively fixed, the monopolistic firm can expand its market only by offering selective discounts to more and more submarkets. This is exactly the pattern observed in the California cellular industry. The principal characteristic of the cellular discounts is that they reflect only differences in customer demand characteristics; the discounts have little or nothing to do with cost differences. No cellular carrier has even suggested that its discounts are in any way cost-based.

Even if it could be demonstrated that large corporate, governmental and institutional customers have negotiated lower rates by playing one carrier against the other, the individual customer still paying the basic rate requires protection from monopoly pricing.<sup>69</sup> Such is the nature of the FCC's continuing regulation of AT&T's interstate toll rates. The Commission recognizes that large users have the leverage to create competition in a highly concentrated market, but that leverage by large customers cannot justify removal of price caps on the basic toll rate structure paid by individual end-users.<sup>70</sup>

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<sup>69</sup>The portion of the market paying these rates appears to be in some dispute. Charles River (at 13) claims that only 31 percent of customers in large markets and 23 percent in small markets paid non-discounted rates in 1994. Yet the CPUC notes in Decision 94-08-022 (at 48) that among the smaller cellular markets, over 80 percent of subscribers were on Basic Service in 1993.

<sup>70</sup>CC Docket No. 87-313, Report and Order and Second Further Notice of Proposed Rulemaking, April 17, 1989.